CONTROLLED COMPLIANCE FINE PITCH INTERCONNECT

Field of the Invention

The present invention is directed to a method and apparatus for achieving a very fine pitch, solderless interconnect between a flexible circuit member and another circuit member, and to an electrical interconnect assembly for forming a solderless interconnection with another circuit member.

Background of the Invention

It is desirable to probe test each die or device under test (DUT) before the wafer is cut into individual integrated circuit die or before packaging. Die testing often needs to be performed at high speed or high frequency, for example 100 MHz data rate or higher. The probe cards that support a plurality of probe needles must provide reliable electrical contact with the bonding pads of the DUT. The shank of the probe needle is typically 0.005 inches to 0.010 inches in diameter.

One test probe technique is known as the Cobra system, in which the upper ends of the probe needles are guided through a rigid layer of an insulating material. The upper ends of the individual probe needles are electrically connected to suitable conductors of an interface assembly that is connected to an electrical test system. Each of the needles is curved and the lower ends pass through a corresponding clearance hole in a lower rigid layer or template of insulating material. The bottom ends of the needles contact the bonding pads on the wafer being tested. The length of the probe needles can result in undesirable levels of ground noise and power supply noise to the DUT. Additionally, the epoxy or plastic rigid layers have large coefficients of thermal expansion and cause errors in the positioning of the needle probes.

This appl. is a 371 of PCT/US00/20748 filed 7/31/2000 which claims benefit to provisional application serial number 60/146825 filed 8/2/1999.